Translation

PCT/EP2003/010719

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference M 9211 PCT	FOR FURTHER ACTION	See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)
International application No. PCT/EP2003/010719	International filing date (*day/month/year*) 26 September 2003 (26.09.2003)	Priority date (*day/month/year*) 18 November 2002 (18.11.2002)
International Patent Classification (IPC) or national classification and IPC A61G 13/12		
Applicant MAQUET GMBH & CO. KG		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 5 sheets, including this cover sheet.

   ☐ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

   These annexes consist of a total of 4 sheets.

3. This report contains indications relating to the following items:

   - I ☒ Basis of the report
   - II ☐ Priority
   - III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
   - IV ☐ Lack of unity of invention
   - V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
   - VI ☐ Certain documents cited
   - VII ☐ Certain defects in the international application
   - VIII ☐ Certain observations on the international application

Date of submission of the demand	Date of completion of this report
17 February 2004 (17.02.2004)	18 February 2005 (18.02.2005)
Name and mailing address of the IPEA/EP Facsimile No.	Authorized officer Telephone No.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.
PCT/EP2003/010719

I. Basis of the report

1. With regard to the elements of the international application:*

☐ the international application as originally filed

☒ the description:
pages 3-6, as originally filed
pages _____, filed with the demand
pages 1, 2, filed with the letter of 10 May 2004 (10.05.2004)

☒ the claims:
pages _____, as originally filed
pages _____, as amended (together with any statement under Article 19
pages _____, filed with the demand
pages 1-7, filed with the letter of 10 May 2004 (10.05.2004)

☒ the drawings:
pages 1/2-2/2, as originally filed
pages _____, filed with the demand
pages _____, filed with the letter of _____

☐ the sequence listing part of the description:
pages _____, as originally filed
pages _____, filed with the demand
pages _____, filed with the letter of _____

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.
These elements were available or furnished to this Authority in the following language _____ which is:

☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).

☐ the language of publication of the international application (under Rule 48.3(b)).

☐ the language of the translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

☐ contained in the international application in written form.

☐ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority in written form.

☐ furnished subsequently to this Authority in computer readable form.

☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☐ The amendments have resulted in the cancellation of:

☐ the description, pages _____

☐ the claims, Nos. _____

☐ the drawings, sheets/fig _____

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**

* *Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rule 70.16 and 70.17).*

** *Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.*

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.
PCT/EP 03/10719

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	1-7	YES
	Claims		NO
Inventive step (IS)	Claims	1-7	YES
	Claims		NO
Industrial applicability (IA)	Claims	1-7	YES
	Claims		NO

2. Citations and explanations

1. Reference is made to the following documents:

D1: WO 01/76403 A (MAZZEI WILLIAM), 18 October 2001 (2001-10-18)

D2: US-B1-6 374 441 (BEGELL SUZANNE), 23 April 2002 (2002-04-23)

2. Document D1, which is considered to be the prior art closest to the subject matter of claim 1, discloses the following (the references in parentheses are to D1):

2.1 Head support for a patient resting surface, with a rigid support shell and a support cushion detachably connected thereto.

2.2 The subject matter of claim 1 differs in that the support shell is approximately horseshoe-shaped and has a central portion designed to support the back of the head or the forehead, said central portion having a contact surface in the form of an at least approximately spherical shell; the support shell also has two mutually spaced side portions, the contact surfaces of which conform at least approximately to a common cylindrical surface whose axis is parallel to a line of symmetry of

the head support running between the side portions; and formed on each side portion is a cheekbone support that projects towards the other side portion.

2.3 The subject matter of claim 1 is therefore novel (PCT Article 33(2)).

3. The problem addressed by the present invention can thus be seen as that of designing a head support which ensures that the head is reliably supported when the patient is lying in either a prone or a supine position, and also that the head is as free as possible so as to allow the surgeon the best possible access when performing operations on the head.

The solution proposed in claim 1 of the present application involves an inventive step (PCT Article 33(3)) for the following reasons (see also the description, page 2, lines 17 to 26):

Because of the horseshoe shape, the support shell is relatively flat, and yet it still offers reliable support for the head at the most suitable contact points, namely the back of the skull, the forehead and the cheekbones. The other parts of the head are largely free and therefore readily accessible for surgical interventions.

The head support described in D1 is in the form of a helmet that covers at least half of the head. The helmet covers only the face, and is therefore intended to support the head when the patient is lying in the prone position. A head support of this type severely restricts access to some parts of the head for the purpose of surgical interventions.

The central portion of the horseshoe-shaped head support described in document D2 is not in the form of a spherical shell, and the contact surfaces of the side portions are not cylindrical. The head support of D2, like that of D1, is only intended to support the head when the patient is lying in the prone position.

4. Claims 2 to 7 are dependent on claim 1 and therefore also meet the PCT requirements in respect of novelty and inventive step.

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10/534837

JC14 Rec'd PCT/PTO 13 MAY 2005

Replaced by Art. 34

Translation of International Application No. PCT/EP03/010719

HEADREST FOR A PATIENT-BEARING SURFACE

The invention concerns a headrest for a patient-bearing surface, especially that of an operating table.

A headrest is known from U.S. 6,276,012 B2, which rest consists of a U-shaped part and a plate-shaped section lying between the legs of the U. In the case of a patient lying on his or her back the head of the patient is supported by both of the parts. In the case of the patient lying on his or her stomach the plate-shaped part is swung away so that the head of the patient lies with the forehead on the middle bar of the U, and at least the mouth and nose of the patient lie free. The headrest in its entirety is essentially flat and is cushioned. In the case of the patient lying on his or her back as well as the case of the patient lying on his or her stomach the head is not laterally supported.

From US-A-6,042,184 a lounge chair is known which is provided with a plate-shaped headrest. In the plate-shaped headrest an opening is formed which is surrounded by a circular, not entirely closed, cushion which is fastened to the plate by pressure pins. In this case also, the head of the person can be supported with the person lying on his or her back or with the person lying on his or her stomach, with the face lying free. The headrest is however not well adopted to the shape of human heads and is unsuited to support the head of a patient during an operation where the patient has to be held motionless for a long time and in such a way that the patient is not injured for example by pressure points or the like.

The invention has as its object the provision of a headrest of the previously mentioned kind which allows the head of the patient to be securely held in a desired position both in the case of the patient lying on his or her back and the case of the patient lying on his or her stomach, and for the patient to be supported with comfort.

For solving this object the headrest of the invention has an approximately horseshoe-shape with a central section for supporting the rear of the head or the forehead, the outer support surface of which central section has an approximately spherical shape, and with two side sections spaced from one another, the support surfaces of which side sections approximately conform to a common cylindrical surface whose axis runs parallel to a line of symmetry of the headrest running between the side sections, with a cheekbone support projecting in the direction toward the opposite side section being formed on each of the side sections.

The headrest of the invention is adapted to the particular shape of the human head supports the head on suitable surfaces of the skull, namely the rear of the head or the forehead as well as the cheekbones. By way of the spherical shape and cylindrical curvature of its sections the head is so bedded that it cannot fall to the side. The cheekbone supports on the side sections make possible on one hand a good support of the face in the case of the patient lying on his or her stomach, with however the eye parts and the mouth and nose remaining free for inhaling and exhaling as well as for the use of an anesthesia mask or other aids. Because of the anatomically correct shape of the headrest of the invention the weight of the head is distributed in large area fashion over the sections of the headrest so that localized pressures are avoided and thereby even in the case of lengthy operations pressure points on the head, especially on the face, can be avoided.

Preferably the headrest is made of a rigid rest shell and a support cushion releasably connectable with the shell. In contrast to customary headrests in the case of which for lateral support of the head the cushion must be made very thick, that is the head sinks relatively far into the cushion, in the case of the solution according to the invention because of the anatomical shape of the headrest the support cushion can be made thinner. The rest shell is advantageously

Claims

1. A headrest for a patient-bearing surface, characterized by an approximately horseshoe-shaped form with a central section (14) for supporting the rear or forehead of a head, which central section has a support surface of approximately spherical shape, and with two side sections (16) spaced from one another, the support surfaces of which side sections conform at least approximately to a common cylindrical surface whose axis runs parallel a line of symmetry (20) running between the side sections (16) of the head support, with there being a cheekbone support (18) on each of the side sections (16) which cheekbone support projects in the direction toward the other side section (16).

2. A headrest according to claim 1, further characterized in that it includes a rigid rest shell (10) and a support cushion (12) releasably connected with the rest shell.

3. A headrest according to claim 2, further characterized in that the rest shell (10) is made of plastic.

4. A headrest according to claim 2 or 3, further characterized in that the support cushion (12) on its side facing the rest shell (10) carries at least two stick pins (38) designed for insertion into through going bores (40) in the rest shell (10).

5. A headrest according to claim 4, further characterized in that the stick pins (36) each have a cylindrical shaft which cylindrical shaft has an elastically resilient band (38) with an external diameter slightly larger than the diameter of said bores.

6. A headrest according to one of claims 1 to 5, further characterized in that it is divided into two mirror image similar partial supports (50) along its line of symmetry (20).

7. A headrest according to one of claims 1 to 6, further characterized in that the headrest or each partial rest is connected to a fastening block (42) for holding it to a profiled rail.

8. A headrest according to one of claims 1 to 7, further characterized in that on the outer edge of each side section (16) is formed an eye (26) for the fastening of a belt (26) for fixing the head of a patient to the headrest.